DOCUMENT RESUME

ED 334 436 CE 058 502

TITLE	Developing School Laboratories To Promote the Establishment of Individual Experience Programs. Final Report.
INSTITUTION	Valley Springs School District 2, Ark.
SPONS AGENCY	Arkansas State Dept. of Education, Little Rock. Div. of Vocational and Technical Education.
PUB DATE	Jun 90
NOTE	38p.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*Agricultural Education; *Agricultural Production; Animal Husbandry; Curriculum Development; Educational Improvement; Educational Needs; Field Crops; High Schools; *Laboratories; *Program Improvement; *Supervised Occupational Experience (Agriculture); *Vocational Education
IDENTIFIERS	Arkansas

ABSTRACT

A project was conducted to promote and develop individual Supervised Agricultural Experience (SAE) programs in Arkansas through the development of laboratories. It was felt that strong SAE programs enhance the instructional portion of agriculture education, serve as a motivational tool, and improve the relations between the local school and community. Project activities included planning and implementing nontraditional programs and/or improving existing supervised agricultural experience programs for all agricultural education students; and demonstrating to agricultural students opportunities in new, nontraditional, and specialty areas of production agriculture. A survey was conducted to identify small specialty plant and animal production areas suitable for the local area. The list developed was reviewed by members of the local Future Farmers of America alumni and by specialists in the field. The identified project areas of mushrooms, honey bees, blueberries, blackberries, strawberries, grapes, fruit trees, rabbits, quail, and sheep will be initiated over a 3-year period. Recommendations were made to: (1) increase the number of high schools with land or livestock laboratories; (2) place more emphasis on production programs; and (3) modify the present curriculum to include more training in specialty production agriculture. (Appendixes include: student interest survey; results of preenrollment survey and midyear survey; samples of training agreement, training plan, onsite supervision report, and progress chart; diagram of a school laboratory; and eight references.) (KC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED334436

FINAL REPORT

DEVELOPING SCHOOL LABORATORIES TO PROMOTE THE ESTABLISHMENT OF INDIVIDUAL EXPERIENCE PROGRAMS

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

D. WALZ

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Conducted by

Valley Springs High School
Valley Springs, Arkansas
Anthony Ashlock, Project Director

In Cooperation with
Vocational and Technical Education Division
Arkansas Department of Education
Little Rock, Arkansas 72201

Funded under the Provisions of
P.L. 98-524

June 1990

CE058502

TABLE OF CONTENTS

Contents	Page
Introduction	1
Objectives	1
Procedures	7
Evaluation	10
Conclusions and Recommendations	13
Abstract	16
Appendices	17
A - Student Interest Survey	18
B - Results of Pre-enrollment Survey	20
C - Results of Mid-year Survey	22
D - Sample of Training Agreement	24
E - Sample of Training Plan	26
F - Sample On-site Supervision Report	28
G - Sample of Progress Chart	30
H - School Laboratory Scale	32
I - References	34

INTRODUCTION

Changes in Agriculture are more prevalent today than ever before. Declining enrollments in agricultural education courses in Arkansas and the United States are one of the greatest challenges facing agricultural educators today. Declining enrollments can be attributed to: a) graduation requirements; b) the farm crises; c) college entrance requirements; and d) declining levels of funding on federal, state, and local levels. The development of new areas of agriculture and revitalization of existing programs are a must if we are to compete in today's educational arena.

The purpose of this project was the promotion and development of individual Supervised Agricultural Experience Programs for agricultural education through the development of laboratories. Strong SAE programs enhance the instructional portion of agriculture education, serve as a motivational tool, and improve the relations between the local school and community.

OBJECTIVES

The purpose of this project is the promotion and the enhancement of individually supervised agricultural experience programs for agricultural education students.

These programs are required of all students enrolled in agricultural education and provide for an essential portion of their education. Experience programs can be either a production enterprise or an agribusiness enterprise. Agricultural education students are required to plan and execute a supervised agricultural experience program. This program can be either a Type-A (Supervised Production program) or Type-B (Supervised Work Experience Program).

The Type-A program is made up of one or more Productive Enterprise Projects, one or more Improvement Projects, and several Supplementary Farm Practices. Each student with this type of supervised training program should have the above three parts included. A Productive Enterprise Project is a business venture for profit usually limited to a production cycle in a farm enterprise. An Improvement Project is a project consisting of several related jobs intended to increase appreciably the real estate value of the farm or improve the efficiency of the farm business. A Supplementary Farm Practice is a single task intended to improve the development of skills and abilities which do not occur in any of the student Productive Enterprise Projects or Improvement Projects.

The Type-B program is made up of a selected group of

jobs to either increase a student's skills or abilities; to improve the value of property, both real or personal; or to gain experiences under actual work experiences. Students may earn income while carrying out these experiences. Each student in this type of training program must plan a minimum of 100 hours of actual work experience above and beyond the regular in-school instructional program.

Typically, agricultural departments have four types of students: (1) the student who either has the opportunity for a production project, such as beef production or has a part time job or owns an agribusiness enterprise; (2) the student who cannot participate in a Type-B program due to age, available transportation, or skills or training; (3) the student who does not have access to space or financing for a large production project, but could develop an enterprise on a smaller scale; (4) the student who is not interested in the typical production areas currently practiced in the local community.

The goals of this project are as follows: a) planning and implementing non-traditional and/or improving existing supervised agricultural experience programs for all agricultural education students; b) demonstrating to all agricultural education students opportunities in new,

non-traditional, and specialty areas of production agriculture suited to the local area.

A survey was conducted to identify possible small and/or specialty plant and animal production areas suitable for the local area. This list was reviewed and revised by members of the Valley Springs FFA Alumni Association and was further refined through consultation with the various area specialists at the University of Arkansas. The identified project areas of mushrooms, honey bees, blueberries, blackberries, strawberries, grapes, fruit trees, rabbits, quail, and sheep will be initiated over a three year period based on student and community interest with advice and guidance received form the consultants.

A major concern of agriculture educators is the opportunity for, and the development of viable, individualized Supervised Agricultural Experience Programs. Strong SAE programs enhance the instructional portion of agriculture education, serve as a motivational tool and, improve the relations between the local school and community. SAE programs should be selected, planned, conducted, and evaluated at the local level. This should improve the stability of agriculture in high schools and increase the production of agriculture commodities in Arkansas.

Since the beginning of this project the attitude of the students has changed, and more students are becoming involved in production agriculture due to the new areas of production added to the school laboratory. The agricultural education program consists of an average of 70 students per year. Approximately 9% of the students are female, 30% of the students have production (Type-A) programs, and 70% of the students have a work experience (Type-B) programs. Of these approximately 36% of the students have access to less than one acre of land, 35% of the students have access to more than one but less than ten acres of land, and 27% of the students have access to more than ten acres of land.

Improving production agriculture for high school students in Arkansas may be accomplished by involving more students in production farming on a smaller scale than the traditional larger livestock and crop farms. In order to make progress, with more students involved in production agriculture, we must move toward areas of agriculture which are not as prevalent as beef, dairy, swine, or row crop production in Arkansas. The focus needs to swing in the direction of smaller more non-traditional areas of production agriculture, such as mushrooms, blueberries, fruit trees, sheep, rabbit, and quail production.

Valley Springs School District is a small rural area

with a high proportion of families living on ten or fewer acres, which limits the size and scope of production enterprise available to students. This information was collected via a survey of students that were pre-enrolled in agricultural education at Valley Springs for the 1987-88 school year. As indicated, 47 of the students pre-enrolled were in this category. New students and continuing students with Type-B programs were asked to choose and rank their choices of SAE programs related to the various production areas. As one can see from the survey (appendix B), a high number of students (80%) were interested in small specialty production areas, which are not currently being produced in our local community. The objectives of this project were:

1. To develop a model school laboratory which would demonstrate current practices in small and/or specialty production areas.
2. To develop competencies and skills necessary in planning, developing, and conducting a viable supervised agricultural experience program.
3. To develop an awareness of production agriculture opportunities for students with limited resources.
4. To increase student enrollment in agricultural education.
5. To improve the number of students applying for

Proficiency Awards and State FFA Degrees.

6. To encourage agricultural educators to plan and develop laboratories for improving supervised agriculture supervised experience programs.

PROCEDURES

The purpose is to describe the data and methods employed in the analysis of the study. Specifically, the project delineates the study of the specialty production areas, the sampling of students areas of interest, the development on a school laboratory, and the development of a management plan.

The study of special production areas was conducted on the premise that providing specialty production areas in a school laboratory setting would increase the interest and enrollments of students by developing an awareness of specialty production SAE programs. A list of production areas were compiled with the help of the University of Arkansas Agricultural and Extension Education Faculty and special interest groups. These areas were then reduced to reflect the specialty production areas suitable for the particular locality. A survey was developed and administered to the students pre-enrolled in agricultural education to determine their interest in these areas of production agriculture. A second survey was conducted

after the project had begun and the students could view these production areas in progress.

The surveys revealed the number of male and female students enrolled with Type-A and Type-B programs, the size of their property, and what areas of interest each student had in production agriculture. The difference between survey I and survey II is that survey II was completed after the students had established their SAE programs, and each student had a better knowledge of the potential and direction of the school laboratory.

The development of the school laboratory occurred in three stages during a three year period. The idea is to develop small plots of one-fourth acre or less in strawberries, mushrooms, sheep, etc., in order that students may develop skills and competencies in these different production areas. This was evident through building barns, fences, corrals, rabbit cages, spawning mushroom logs, planting strawberries, and installing irrigation systems.

During the first stage a half-time assistant was hired to assist with supervision and development of the project. Land preparation was completed for the strawberries, fruit trees, mushrooms, and rabbitry. There were over 1000 logs plugged with six different strains of mushroom spawn, waxed, and stacked for shiitake mushroom

production. The rabbitry was constructed (24' x 30') with cages and automatic waterers. The rabbitry has grown to a 20 doe herd, with 6 bucks, and fryers sold to a company from Kansas City, Missouri. Six head of sheep were purchased, consisting of two aged ewes, two yearling ewes, and two whethers. The sheep over a three year period were placed with 4 students and between the sheep at school and the students the herd growth has increased to more than 40 head. Also, there were approximately thirty fruit trees planted consisting of peach, nectarine, plum, and apple. The fruit trees froze during the first winter, was replanted, froze out the second year with -10 degree temperature and managed to save 10 apple trees.

The second year consisted of planting 1/4 acre of blueberries. Automatic drip irrigation was installed as the blueberries were planted and sawdust use a mulch. Blooms were picked off the first blooming season. The blueberries were assigned to 5 students as their SAE project. A quail barn was constructed and quail equipment purchased. Two students are assigned to care for the quail facility to fulfill the SAE requirements. Three sets of bee hives were place on the laboratory site which later swarmed and have not been replaced. A ram was purchased for breeding of the ewes. Strawberries and mushrooms produced the second year. Approximately one

third of the mushrooms strains produced a limited amount of mushrooms.

During the third year all of the mushroom strains produced with the exception of one strain. Strawberries produced a limited amount due to a -10 degree temperatures which froze most of them out. The blueberries are bearing a substantial amount for the first year of production. The rabbits and sheep are reproducing at a normal pace and have marketed the first crop of wool.

Students who do not have an Type-A production SAE and desire this type of production are assigned a laboratory SAE project to manage and assume responsibility of that project through the duration of their enrollment in agricultural education. The assignment of a project area is based on their major interest area. Students are required to: 1) sign a training agreement, 2) follow a training plan, 3) be evaluated, and 4) keep a progress chart as they progress in a laboratory situation.

EVALUATION

Eighty-five students participated in the pre-enrollment survey and eighty-three participated in the mid-year survey. Those production areas surveyed for students interested were: (refer to appendix B and C)

SPECIALTY CROPS

*1. Mushrooms
*2. Honey Bees

HORTICULTURE

*1. Blueberries
 2. Blackberries
*3. Strawberries
 4. Grapes
*5. Fruit Trees
 6. Bedding and Nursery Plants

SPECIALTY ANIMALS

*1. Rabbits
*2. Quail
*3. Sheep

*Areas which were completed

The students erected a 26' x 30' beef and sheep barn, which included a feed room, three 10' x 10' stalls, and three alley ways 200' in length. Selected students worked in the afternoon under the supervision of an aid and classes such as livestock production helped as a class project. The barn houses six sheep at the present. The students constructed a 24' x 30' rabbit barn which contains 48 cages with automatic waterers. The students also constructed a 12' x 14' Quail barn and the equipment to operate the facility.

The students have spawned over 1000 logs with Shiitake Mushroom's spawn. They used six different strains of spawn, drilled 30,000 holes, plugged the holes with 7/8" dowels inoculated with spawn, covered the plugs

with wax, stacked the logs and covered them with a shade cloth to provide sufficient shade during the hot summer months.

The students planted 1000 strawberry plants and 30 fruit trees peach, nectarine, and plum. Apple and pear trees were also planted the next fall.

During the second year included planting 300 blueberry plants and installing the irrigation system necessary to sustain the plants during the hot summer months. Bee hives were set, which later swarmed. The University of Arkansas could not supply the grape plants as previously planned.

Students have been assigned a production area according to their #1 choice on the survey. Four students have been assigned to the sheep, ten students have been assigned to the strawberries, three students have been assigned to the mushrooms, two students to the fruit trees, one student to the rabbits, and five students to the blueberries. Each of the students are recording their experiences in their Arkansas Record Books. As each area is developed students will be assigned or reassigned to care for the area he/she is most interested.

Since the project has started, FFA students have started their own projects at home. Three students are raising Shiitake Mushrooms consisting of approximately 16

logs each and two students raising buttom mushrooms in caves. Two students have started small strawberry plots consisting of approximately 200 plants each. Six students are raising sheep, as a result of the sheep project. One student placed 2nd in the State Agriscience Student Recognition Program and 3rd in the Specialty Crop Proficiency Award Program.

The interest is building each year that the project is in progress and will be even more evident during the next few years as the project continues to grow and expand.

CONCLUSIONS AND RECOMMENDATIONS

Analysis of these project results to date have brought forth the following conclusions:

1. Students' individual interest in production agriculture can be stimulated if they can choose and become involved in a area of agriculture that is of interest to them. Survey I and survey II demonstrated the interest that can be stimulated when and where school laboratories are in development.
2. Each agricultural education department needs a laboratory to develop skills and competencies of students enrolled in agricultural education. School laboratories

may also provide training for adult members of the community.

3. Administrators and school boards need to be more involved in helping agricultural education departments achieve goals that meet the students' needs as well as the needs of the community. Administrations and school boards must recognize the benefits of a school laboratory and the need for finances.

4. Agriculture educators need to analyze, plan, and develop a laboratory that fits the needs of the students, and the community in order to develop and maintain interest in production agriculture. This may be accomplished by surveying the students and community in each individual school district.

The following recommendations are based upon the preceding conclusions and should be considered when additional research is conducted in this area.

1. As a recommendation to conclusion one, agricultural education educators should seek direct input from the students and community to determine the type of school laboratory to develop or when considering the initiation of new production areas.

2. As a recommendation to conclusion two, school

laboratories need to be developed on a local basis determined by the type of agriculture, the students interest, the community support, and the school support.

3. As a recommendation to conclusion three, school administrators and school boards need to become more familiar with agriculture education and its special needs in order to develop an agriculture department that meets the needs of the students and community. This may be accomplished by inviting school board members and administrators to advisory committee meetings, FFA meetings, FFA Alumni meetings, state conventions, national conventions, and other local activities.

4. As a recommendation to conclusion four, educators should plan and develop laboratories that will be beneficial to the future of their students. This may be accomplished by adapting to new and innovative technology and teaching methods.

5. As a recommendation to conclusion four, educators should plan and develop laboratories that will compliment the instruction in the classroom and the curriculum used by the educators. The competencies and skills needed to be correlated to the areas developed in the school laboratories and curriculum in use.

ABSTRACT

Agricultural educators need a guide for developing Supervised Agricultural Experience Programs required of all students enrolled in agricultural education, which provides an essential portion of their education. The Objectives of this project included: a) planning, implementing, and/or providing non-traditional supervised agricultural experience programs; b) providing an opportunity for the non-traditional agricultural education students to develop production oriented SAE programs; and c) demonstrating opportunities in new non-traditional and specialty areas of production agriculture. The methodology involved the analysis of local production agriculture, the prediction of new production areas, and the determination of student interest. Results indicated that students were interested in new areas of production agriculture. Recommendations are: a) increase the number of high schools with land or livestock laboratories; b) place more emphasis on production programs; c) modify the present curriculum to include more training in specialty production agriculture.

APPENDICES

APPENDIX A

VALLEY SPRINGS AGRICULTURAL EDUCATION
STUDENT INTEREST SURVEY BASED ON
ENROLLMENT IN 1987-88 SCHOOL YEAR

Name of Student_____

Address_____

Phone No._____S.S. No._____

Age_____Sex_____Grade_____

Name of Parent or Guardian_____

Do you have an existing production program? yes no

If yes what type of project?_____

Number of acres where you live and/or have access to.

Less than one____, More than one but less than ten_____

or more than ten_____.

Could you have a production project? yes no

Which of the following areas interest you (rank 1,2,&3)?

Specialty Crops	Horticulture	Specialty animals
___Mushrooms	___Blueberries	___Rabbits
___Honey Bees	___Blackberries	___Quail
	___Strawberries	___Sheep
	___Grapes	
	___Fruit Trees	
	___Bedding & Nursery	

APPENDIX B

VALLEY SPRINGS AGRICULTURAL EDUCATION
INTEREST SURVEY BASED ON PRE-ENROLLMENT FOR 1987-88

CATEGORY	NUMBER IDENTIFIED
1. Number of students pre-enrolled 9-12	85
2. Number of male students	74
3. Number of female students	11
4. Number of male students with a type-A	16
5. Number of female students with a type-A	0
6. Number of male students with a type-B	31
7. Number of female students with a type-B	6
8. Number of male students with no program	27
9. Number of female students with no program	5
10. Total students targeted in 6,7,8,&9	69
11. Number of students with < one acre	17
12. Number of students with > one but < ten acres	30
13. Number of students with > ten acres	22
14. Students responses in regard to their interest:	

AREA OF PRODUCTION	1st, 2nd, and 3rd choice		
Blueberries	10	5	9
Blackberries	5	20	10
Strawberries	13	10	20
Grapes	1	5	3
Fruit Trees	7	6	5
Bedding and Nursery Plants	4	2	3
Rabbits	20	10	9
Mushrooms	1	1	0
Quail	6	6	8
Sheep	2	4	2

APPENDIX C

VALLEY SPRINGS VOCATIONAL AGRICULTURE

INTEREST SURVEY DURING MID-YEAR 1987-88

CATEGORY	NUMBER IDENTIFIED
1. Number of students enrolled	83
2. Number of male students	76
3. Number of female students	7
4. Number of male students with Type-A programs	25
5. Number of female students with Type-A programs	1
6. Number of male students with Type-B programs	51
7. Number of female students with Type-B programs	6
8. Total number in category 6 and 7 targeted	57
9. Number of students with < one acre	30
10. Number of students with > one but < ten acres	15
11. Number of students with > ten acres	38
12. Students responses in regard to their interest:	

AREA OF PRODUCTION	1st, 2nd, and 3rd choice		
Blueberries	7	7	9
Blackberries	1	4	6
Strawberries	6	15	8
Grapes	4	2	3
Fruit Trees	7	9	7
Bedding and Nursery Plants	2	3	7
Rabbits	17	17	13
Mushrooms	5	3	6
Quail	16	8	5
Sheep	10	8	7
Bees	8	7	12

APPENDIX D

TRAINING AGREEMENT
SCHOOL LABATORY

To provide a basis of understanding and to promote sound business relationships this agreement is established on _____, 19_____. Placement will begin on_____,19_____ and will end on or about_____ 19_____ unless the arrangement becomes unsatisfactory to either party.

Name of Advisor_____

The working hours will be as follows:

While attending school_____

When not attending school (summer)_____

THE STUDENT AGREES TO:

Do an honest day's work.

Follow instructions, avoid unsafe acts and be alert to unsafe conditions.

Keep records of occupational experience and make required reports.

Achieve competencies indicated in placement plan.

THE ADVISOR, IN BEHALF OF THE SCHOOL, AGREES TO:

Check and approve the student placement.

Provde a copy of the agreement to the school and parents.

Assist the student in developing a SUPERVISED EXPERIENCE PROGRAM

Visit the student on site of their S.O.E. program at school laboratory or at the students home.

PARENT'S AGREE TO:

Assist in promoting the value of the student's S.O.E.

Assist in providing transportation to and from school according work schedule.

Student	Parent	Advisor

APPENDIX E

Sample Training Plan

NAME OF STUDENT: _____ TEACHER'S NAME: _____

STUDENT'S OCCUPATIONAL OBJECTIVE: _____

BEGINNING DATE: _____ ENDING DATE: _____

SOE TRAINING STATION: _____

EXPERIENCES/COMPETENCIES	DATE ACCOMPLISHED	SCHOOL-RELATED INSTRUCTION	CHECK WHEN DONE

BEST COPY AVAILABLE

APPENDIX F

Individual On-Site Supervision and Instruction Report Form

School Valley Springs

Date September 1, 1987

Student's Name Tom Smith

Kind of Program
(check one)
( ) Placement
(x) Ownership

Occupational Objective Farmer

SOE Activities/ Enterprises	Observations	Recommendations/ Demonstrations
Establishing a Strawberry field	Field well Choosen and location is well drained.	Needs some larger rocks removed

Teacher's Signature

BEST COPY AVAILABLE

APPENDIX G

PROGRESS CHART
STUDENT'S SUPERVISED OCCUPATIONAL EXPERIENCES

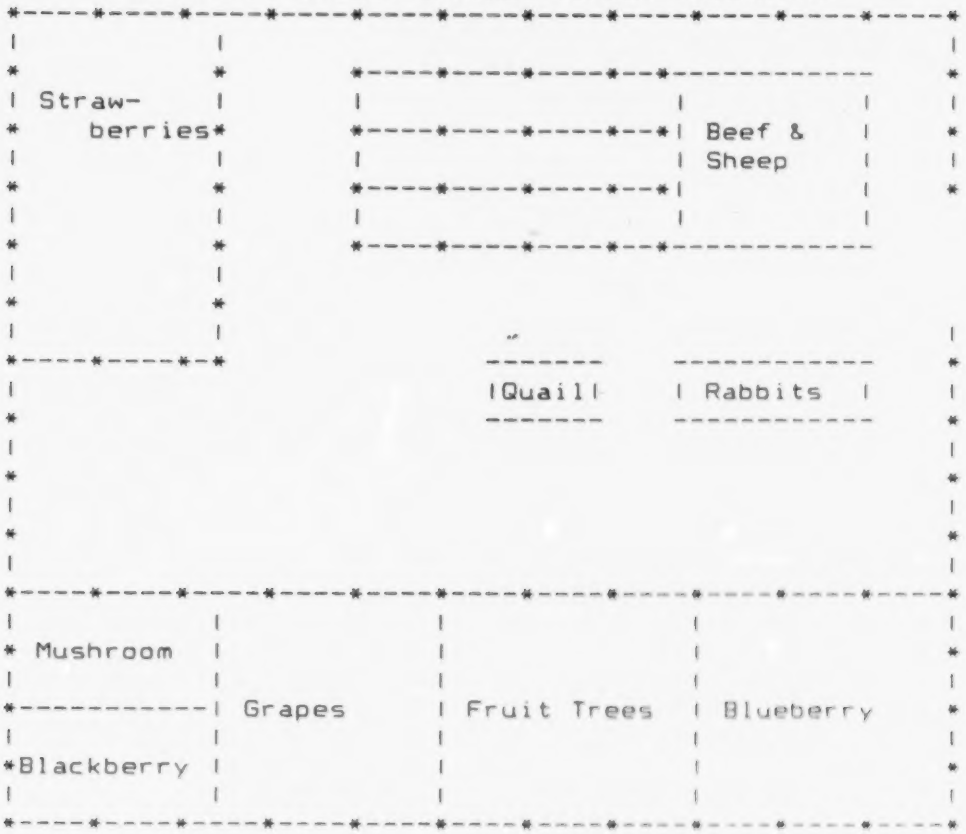
Date May, 1 1988
Class 10th Grade

Name of Student	Selected Occup. Objective	Identify SOE	Prepare Training Plan	Start Record Book	Ownership	Job Placement	Selected Supplemental Skills	Improvement Project	Set Proficiency Goals	Set FFA Degree Goal	Year End Analysis Record Book	Selected Contest Goals		
Tom Smith	X	X	X	X	X		X	X		X		X		
Jane Doe		X	X	X		X				X				
Bob Jones	X	X	X	X	X		X	X	X	X		X		

BEST COPY AVAILABLE

APPENDIX H

DIAGRAM OF VALLEY SPRINGS SCHOOL LABORATORY



APPENDIX I

REFERENCES

Agnew, David M., and Bill Vestal. " Quality Animal Science Laboratories." The Agricultural Education Magazine. Vol. 58, No. 12, (1986) : 15-18.

Bender, Mark, and Cole, Lee. "Small Animals: How To Realize Their Potential." The Agriculture Education Magazine. Vol 59, No. 4, (1986) : 19-21.

Binkley, Harold R., and Charles W. Byers. SOE Programs in Agriculture. 1st ed. Danville, Ill.: The Interstate, 1984.

Newman, Michael E., and Powell, Ronald L. "Specialty Crops: Their Role in Vocational Agriculture." The Agriculture Education Magazine. Vol 59, No. 4, (1986) : 11-12.

McGray, Lawinna. " Proficiency Winners Survey Report." The Agricultural Education Magazine. Vol. 59, No. 2, (1986): 21.

Puckett, James D. " The School Farm--A Practical Facility." The Agricultural Education Magazine. Vol. 50, No. 1, (1977) : 10-13.

Whittington, Susie. " Using SOE to Increase Enrollment." The Agricultural Education Magazine. Vol. 60, No. 1, (1987) : 11.

Zinner, Charles. " Uses of Land Laboratories." The Agricultural Education Magazine. Vol. 54, No. 12, (1982) : 14-15.